

it can be satisfactorily proved that such works can be made *reproductive*, and handed down to posterity as the triumph of the infant age of Victoria, and worthy of the times in which we live.

ART. IX.—*On the Construction of an Instrument for ascertaining the Dew Point.* By R. BROUGH SMYTH, Esq., C.E., F.G.S., &c.

[Read before the Institute, 6th May, 1857.]

GREAT difficulty is experienced by Meteorologists in determining the dew point by direct experiment.

In very hot countries, or in those places where the air is very dry, Daniell's beautiful invention is almost valueless. I need not state the objections to the black and white bulbs of Daniell: they are known to all who have ever used a hygrometer systematically, and compared the results with the dry and wet thermometers.

Mr. Glaisher has emphatically protested against the use of Daniell's instrument in hot countries, and indeed has very properly pointed out the liability to error when it is used, under any circumstances, by inexperienced persons. Even with the utmost care the best result is seldom within 0.25° .

An ordinary method of obtaining the temperature of the dew point is by a silver cup, and a freezing mixture. The cup is partly filled with water, and is cooled down by stirring in the refrigerating compound until a deposit of dew takes place on the outer surface of the cup, and at the moment when the dew is observed the temperature of the liquid is taken by a thermometer.

Now all I have to offer as a contribution to the instrumental aids of the Meteorologist is, an improvement on this last method.

The drawing shows at a glance the plan I would propose. The bulb of the standard Kew thermometer *A* is placed close to the inner edge of the thin gold cup *B*. Within the gold cup there is a copper vessel, *C*, connected by a (*Y*) pipe with the exterior cups *C*, *E*, and *F*. These are filled with water, and the temperature of *E* is supposed to be reduced to 33° , or lower when it may be required, by a freezing mixture. By turning the stopcocks, *x x*, the observer can cause the gold cup to be filled with water at any required

temperature with great facility, and without withdrawing his attention from his instrument. It is presumed that the water and the outer edge of the gold cup will be of the same temperature; for after the liquids at different temperatures have passed through, and over the copper vessel, *C*, they will be well mixed before acting on the bulb of the thermometer, or the edge of the cup.

By the stopcock *y* the water, if it be too cold or too hot, can be easily run off into a waste cup.

By this arrangement, though I have not yet proved it by actual observation, it is believed that the dew point can be obtained with minute accuracy, say within 0.10° .

The instrument is easily portable. All the parts can be unscrewed and packed away; and it does not render necessary the use of a liquid like ether, which is very difficult to carry, and which wastes and deteriorates rapidly during the summer in this country.

ART. X.—*Account of some New Australian Plants.* By
DR. FERDINAND MUELLER.

[Read before the Institute, 5th August, 1857.]

MR. PRESIDENT AND GENTLEMEN—It is not without hesitation that I submit to the Institute a limited number of plants, which have, perhaps, no other claims on your attention but their novelty; and I should have retained them for publication in a Phytological Journal, but for a desire of recognizing publicly in Australia the recent contributions of some scientific friends towards our knowledge of the indigenous vegetation. It offers, however, likewise, the opportunity to show how much the wonderful works of Nature remain to be revealed in our own country.

Some of the plants which I have the honor to exhibit are selected from a Herbarium formed by Mr. Hill, the Superintendent of the Brisbane Botanic Gardens, a gentleman of keen observation, and great ardour for botanical research. Others were communicated by Mr. Charles Stuart, who succeeded last season in forcing his way into 'the wilderness of Mount Lapérouse, in South-western Tasmania, and through whose exertions new features of its alpine flora have been unveiled. Others of these plants were discovered during a journey through the Grampians, performed by my zealous